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CHECKLISTS OF PROTECTED AND THREATENED SPECIES IN IRELAND

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An Roinn Cultúir, Oidhreachta agus Gaeltachta
Department of Culture, Heritage and the Gaeltacht

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Front cover, small photographs from top row:

Coastal heath, Howth Head, Co. Dublin, Maurice Eakin; **Red Squirrel** *Sciurus vulgaris*, Eddie Dunne, NPWS Image Library; **Marsh Fritillary** *Euphydryas aurinia*, Brian Nelson; **Puffin** *Fratercula arctica*, Mike Brown, NPWS Image Library; **Long Range and Upper Lake**, Killarney National Park, NPWS Image Library; **Limestone pavement**, Bricklieve Mountains, Co. Sligo, Andy Bleasdale; **Meadow Saffron** *Colchicum autumnale*, Lorcan Scott; **Barn Owl** *Tyto alba*, Mike Brown, NPWS Image Library; **A deep water fly trap anemone** *Phelliactis* sp., Yvonne Leahy; **Violet Crystalwort** *Riccia huebeneriana*, Robert Thompson

Main photograph:

Short-beaked Common Dolphin *Delphinus delphis*, Gary Burrows

Checklists of protected and threatened species in Ireland

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Executive Summary

This volume provides checklists of the plant and animal species that are afforded legal protection in Ireland, through the Nature Directives (Birds and Habitat Directives), and the Wildlife Acts and associated Statutory Instruments (e.g. the Flora (Protection) Order). Checklists are provided for the following groups

- Plants
  - Flowering Plants (Angiosperms)
  - Ferns and Fern-allies (Pteridophytes)
  - Hornworts and Liverworts
  - Mosses
  - Algae
  - Lichens
- Vertebrates
  - Mammals
  - Birds
  - Reptiles
  - Amphibians
  - Freshwater Fish
  - Cartilaginous Fish (Sharks, skates, rays and chimaeras)
- Insects
  - Bees (Hymenoptera, Apoidea)
  - Butterflies (Lepidoptera)
  - Damselflies and Dragonflies (Odonata)
  - Macro-moths (Lepidoptera)
  - Mayflies (Ephemeroptera
  - Stoneflies (Plecoptera)
  - Water beetles (Aquatic Coleoptera)
- Invertebrates (other than insects)
  - Crayfish
  - Non-marine Mollusca

Each checklist also includes species that have been assessed as at risk of extinction on the island of Ireland using the IUCN Regional Red List criteria. All threatened species are listed, i.e. those categorised as Critically Endangered (CR), Endangered (EN) and Vulnerable (VU). Species assessed as Regionally Extinct (RE) and Near Threatened (NT) are also given in the checklists.

In total, 1,050 species are included in the checklists.

1 Introduction

Ferriss *et al*. (2009) produced a taxonomic overview of the marine, terrestrial and freshwater animal species recorded from the Republic of Ireland. This produced an approximate total of 19,000 species but recognised that this figure was likely to be a significant underestimate of the true diversity of Irish fauna. FitzPatrick *et al.* (2010) provided an upper estimate of the number of plants and fungi in Ireland to be in excess of 18,000 species.

A small number of these animal and plant species are protected under Irish legislation. The principal Irish legislation is the Wildlife Act 1976. Amendments to the Wildlife Act and its Statutory Instruments have enacted and amended protection of individual species, notably in order to comply with EU legislation or other international agreements. The Birds and Habitats Directives are the primary EU legislation resulting in the legal protection of species in Ireland. The Acts and Statutory Instruments which list species within the broad taxonomic groupings are referred to in the relevant sections. See also www.npws.ie/legislation. The full text of Irish legal Acts and Statutory Instruments are available from the electronic Irish Statute Book website www.irishstatutebook.ie.

The International Union for the Conservation of Nature (IUCN) coordinates the Red Listing process at the global level, defining the categories so that they are standardised across all taxa. Red Lists are also produced at regional, national and subnational levels using the same IUCN categories (IUCN 2012, 2019). Since 2009, Red Lists have been produced for the island of Ireland by the National Parks and Wildlife Service (NPWS) and the Northern Ireland Environment Agency (NIEA) using these IUCN categories. To date, 13 Red Lists have been completed. The 2006 bee Red List (FitzPatrick *et al*., 2006) also followed the IUCN regional assessment guidelines. All these Red Lists are available to download from the website of the National Parks and Wildlife Service: www.npws.ie/publications/red-lists, and readers are referred to those publications for a full explanation of the assessments and the Red Listing process. Some earlier All-Ireland or Britain and Ireland Red Data books were produced using earlier iterations of the IUCN methodology (Curtis & McGough, 1988; Stewart & Church, 1992; Whilde, 1993). These are referred to if they provide the most recent assessment of the species group.

This volume provides a listing of the plant and animal species that are legally protected in Ireland, and/or Red Listed and, therefore, assessed as in danger of extinction, and/or assessed as Near Threatened and likely to qualify for a threat category in the future. Checklists are presented by taxonomic group and species within each group are listed alphabetically by scientific name.

The treatment of bird species in this checklist differs from other animal groups. All birds are protected by Irish national legislation so the bird checklist is limited to species included on Annex I of the EU Birds Directive and those listed on the latest Birds of Conservation Concern.

It should be stressed that Red Lists and lists of species protected by legislation are subject to reassessment. Whilst the most recent (at date of publication) such lists were used to compile the checklists provided here, readers are advised to regularly check the NPWS website for updated versions. See Section 2.6 for further information.

2 Explanation and key to tables

This Chapter provides a key to the abbreviations used in the checklists given in Chapters 3 to 5. Species are listed alphabetically by scientific name in each table. Synonyms are provided, in parentheses, for more familiar former names. Columns, from left to right, follow the general hierarchy of EU Directives, followed by national legislation and then Red List category (All-Ireland Red Lists), or in the case of birds, Birds of Conservation Concern (BoCCI) status.

2.1 EU Directives

The primary legislation transposing the Nature Directives (Birds and Habitats Directives) into Irish law is the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), as amended.

Table 1 Codes used for the EU Nature Directives, the Birds and Habitats Directives

Code	Explanation
EU HD	**EU Habitats Directive (Council Directive 92/43/EEC)**
II	Animal and plant species listed in Annex II
IV	Animal and plant species listed in Annex IV
V	Animal and plant species listed in Annex V
EU BD	**EU Birds Directive (Council Directive 09/147/EC)**
I	Bird species listed in Annex I

2.2 National legislation

The Wildlife Act 1976 (Number 39 of 1976) was amended on four occasions up to 2019, the principal being the Wildlife (Amendment) Act 2000 (Number 38 of 2000). The Flora (Protection) Order lists the plant species protected by Section 21 of the Wildlife Acts. The regulations that give rise to the protection of animal species under the Wildlife Acts are detailed in the relevant sections. See www.npws.ie/legislation for further information.

Table 2 Codes used for national legislation

Code	Explanation
WA	Wildlife Act, 1976, Wildlife (Amendment) Act, 2000 and other relevant amendments
FPO	Flora (Protection) Order, 2015 (S.I. No. 356 of 2015)

2.3 All-Ireland Red Lists

The Red Lists are an assessment of the risk of extinction of each species and not just an assessment of their rarity. Threatened species are those species categorised as Critically Endangered, Endangered or Vulnerable (IUCN, 2019) – also commonly referred to as 'Red Listed'. All Red Listed species are included in each checklist, together with all the species categorised as Regionally Extinct and Near

Threatened. Where a species is included in the checklist for other reasons, e.g. protected through European or national legislation, and an assessment has been completed, the IUCN Red List category is given. A blank in the 'Red List Status' column means that the species is within a group that has not yet had a Red List assessment.

Red Lists in Ireland refer to the whole island, i.e. including Northern Ireland, and so follow the guidelines for regional assessments (IUCN, 2012, 2019). The abbreviations used within the individual tables are as per Table 3, with the exception of the charophyte algae (see Section 3.5). See the individual Red Lists and IUCN (2012, 2019) for a full explanation of the categories.

Table 3 IUCN Red List categories and their abbreviations

IUCN Code	IUCN Category
RE	Regionally Extinct
CR	Critically Endangered
EN	Endangered
VU	Vulnerable
NT	Near Threatened
DD	Data Deficient
LC	Least Concern
NA	Not Assessed
NE	Not Evaluated

Table 4 provides a list of the All-Ireland Red Lists published or in press since 2009. Note that the Mammals have been subject to two assessments.

Table 4 All-Ireland Red Lists published or in press since 2009

Number	Group	Citation
No. 1	Water beetles	Foster *et al.* (2009)
No. 2	Non-marine Molluscs	Byrne *et al.* (2009)
No. 3	Terrestrial Mammals	Marnell *et al.* (2009)
No. 4	Butterflies	Regan *et al.* (2010)
No. 5	Fish, Amphibians & Reptiles	King *et al.* (2011)
No. 6	Damselflies & Dragonflies (Odonata)	Nelson *et al.* (2011)
No. 7	Mayflies (Ephemeroptera)	Kelly-Quinn & Regan (2012)
No. 8	Bryophytes	Lockhart *et al.* (2012)
No. 9	Macro-moths (Lepidoptera)	Allen (2016)
No. 10	Vascular Plants	Wyse Jackson *et al.* (2016)
No. 11	Cartilaginous fish [sharks, skates, rays and chimaeras]	Clarke *et al.* (2016)
No. 12	Mammals	Marnell *et al.* (2019)
No. 13	Stoneflies (Plecoptera)	Feeley *et al.* (in press)

2.4 Birds of Conservation Concern in Ireland

The current status of the regularly occurring Irish bird species is assessed using the Birds of Conservation Concern (BoCCI) guidelines (Colhoun & Cummins, 2013). The last assessment covered the period 2014-2019 and all species assessed as Amber and Red are given in the checklist.

2.5 Licensing

Licences, or other consents, may be required in Ireland for work or activities that could affect the species listed in these checklists, or their habitat, breeding or resting places. The NPWS website (https://www.npws.ie/licences) should be consulted for further information on licences that may be issued by the Minister for Culture, Heritage and the Gaeltacht.

2.6 Updates to the checklists

The checklists will be updated, as and when required, including when relevant legislation and Red Lists are published. The checklists may also be updated to reflect nomenclatural changes. Checklist updates will be communicated through the associated MS Excel File at www.npws.ie/publications/irish-wildlife-manuals. The version accompanying this publication is IWM 116 Checklists Protected and Threatened Species Version 1.0 18 Dec 2019.xlsx. Changes among versions will be documented in the **READ_ME** Worksheet in the MS Excel File. Users are advised to regularly check the NPWS website to ensure they are using the current version. Citation of the MS Excel file name (in full) is also recommended. NPWS takes no responsibility for the use of out-of-date versions.

3 Plants

The checklists of species in this Chapter follow the broad interpretation of 'plants' included in the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011), i.e. to include any seed plant, fern or fern-ally, lycophyte, bryophyte, charophyte, green alga, brown alga, red alga, fungus, slime-mould, lichen, actinomycete or cyanobacterium. The checklists are presented in the following order: Flowering plants (Angiosperms), Ferns and Fern-allies (Pteridophytes), Hornworts and Liverworts, Mosses, Algae, Lichens.

3.1 Flowering Plants (Angiosperms)

The latest Red List assessment of the Irish flowering plants is Wyse Jackson *et al.* (2016), the previous assessment of these being by Curtis & McGough (1988). Scientific names in this checklist (Table 5) follow Stace (2019). Common names follow those given in Scannell & Synnott (1987) and, where not included there, Stace (2019), followed by Sell & Murrell (2006) and Jebb (2019). Synonyms are provided for taxa for which recent nomenclatural/taxonomic research has necessitated changes to the scientific name, the more familiar former name being in parentheses. The relevant national legislation is the Wildlife Act (1976), as amended and the Flora (Protection) Order. The Flora (Protection) Order, 2015 (S.I. No. 356 of 2015) lists 60 flowering plant species. Species assessed as Regionally Extinct (RE) in Wyse Jackson *et al.* (2016) for which native population/s have since been discovered are indicated as RE* and those for which introduced, neophyte populations have since been discovered as RE*[neo] (Table 5).

Table 5 Checklist of Flowering Plants (Angiosperms)

Species name	Common name	EU HD	FPO	Red List Status
Achillea maritima (*Otanthus maritimus*)	Cottonweed		FPO	CR
Adoxa moschatellina	Moschatel			CR
Agrimonia procera	Fragrant Agrimony			NT
Ajuga pyramidalis	Pyramidal Bugle			VU
Alchemilla alpina	Alpine Lady's-mantle			VU
Alchemilla glaucescens	Silky Lady's-mantle			VU
Allium schoenoprasum	Chives		FPO	VU
Alopecurus aequalis	Orange Foxtail		FPO	NT
Althaea officinalis	Marsh-mallow			NT
Anacamptis morio (*Orchis morio*)	Green-winged Orchid			VU
Anthriscus caucalis	Bur Chervil			NT
Arabidopsis petraea (*Cardaminopsis petraea*)	Northern Rock-cress		FPO	VU
Arbutus unedo	Strawberry-tree			NT
Arenaria ciliata	Fringed Sandwort		FPO	VU
Arenaria norvegica	Arctic Sandwort			VU
Aristavena setacea (*Deschampsia setacea*)	Bog Hair-grass		FPO	NT
Artemisia absinthium	Wormwood			VU
Asparagus prostratus (*Asparagus officinalis* subsp. *prostratus*)	Wild Asparagus		FPO	EN
Astragalus danicus	Purple Milk-vetch		FPO	NT
Ballota nigra	Black Horehound			NT

Species name	Common name	EU HD	FPO	Red List Status
Betonica officinalis (*Stachys officinalis*)	Betony		FPO	NT
Bistorta vivipara (*Persicaria vivipara; Polygonum viviparum*)	Alpine Bistort		FPO	VU
Blitum bonus-henricus (*Chenopodium bonus-henricus*)	Good-King-Henry			VU
Blysmus rufus	Saltmarsh Flat-sedge			NT
Bromopsis erecta (*Bromus erectus*)	Upright Brome			NT
Bromus racemosus [incl. *Bromus commutatus*]	Smooth Brome			NT
Buglossoides arvensis (*Lithospermum arvense*)	Field Gromwell			CR
Calamagrostis epigejos	Wood Small-reed		FPO	VU
Calamagrostis stricta	Narrow Small-reed			EN
Callitriche palustris	Narrow-fruited Water-starwort			VU
Callitriche truncata	Short-leaved Water-starwort		FPO	VU
Cardamine impatiens	Narrow-leaved Bitter-cress		FPO	EN
Carduus tenuiflorus	Slender Thistle			NT
Carex acuta	Slender Tufted-sedge			NT
Carex appropinquata	Fibrous Tussock-sedge			NT
Carex buxbaumii	Club Sedge			RE
Carex depauperata	Starved Wood-sedge		FPO	CR
Carex divisa	Divided Sedge		FPO	EN
Carex elongata	Elongated Sedge			NT
Carex pauciflora	Few-flowered Sedge			NT
Carex spicata	Spiked Sedge			NT
Centaurea scabiosa	Greater Knapweed			NT
Centaurium littorale	Seaside Centaury			VU
Centaurium pulchellum	Lesser Centaury		FPO	NT
Cephalanthera longifolia	Narrow-leaved Helleborine		FPO	VU
Chaerophyllum temulum	Rough Chervil			VU
Chamaemelum nobile	Chamomile			NT
Chenopodium vulvaria	Stinking Goosefoot			RE
Cirsium heterophyllum	Melancholy Thistle			CR
Clinopodium acinos (*Acinos arvensis*)	Basil Thyme		FPO	NT
Coeloglossum viride	Frog Orchid			NT
Colchicum autumnale	Meadow Saffron; Autumn Crocus		FPO	EN
Crambe maritima	Sea-kale			NT
Cynoglossum officinale	Hound's-tongue			NT
Cytisus scoparius subsp. *maritimus*	Prostrate Broom			VU
Dasiphora fruticosa (*Potentilla fruticosa*)	Shrubby Cinquefoil			VU
Dianthus armeria	Deptford Pink			EN
Elatine hexandra	Six-stamened Waterwort			NT
Eleocharis parvula	Dwarf Spike-rush			CR
Epilobium alsinifolium	Chickweed Willowherb		FPO	EN

Species name	Common name	EU HD	FPO	Red List Status
Epipactis phyllanthes	Green-flowered Helleborine			EN
Erica vagans	Cornish Heath			CR
Eriocaulon aquaticum	Pipewort			NT
Eriophorum gracile	Slender Cottongrass		FPO	NT
Euphorbia exigua	Dwarf Spurge			NT
Euphorbia peplis	Purple Spurge			RE
Filago germanica (*Filago vulgaris*)	Common Cudweed			VU
Fumaria densiflora	Dense-flowered Fumitory			RE*[neo]
Galeopsis angustifolia	Red Hemp-nettle		FPO	VU
Galeopsis speciosa	Large-flowered Hemp-nettle			NT
Gentiana verna	Spring Gentian			NT
Gentianella amarella	Autumn Gentian			NT
Gentianella campestris	Field Gentian			NT
Geranium pratense	Meadow Crane's-bill			VU
Geranium purpureum	Little-Robin			NT
Geranium sylvaticum	Wood Crane's-bill			EN
Glaucium flavum	Yellow Horned-poppy			NT
Glebionis segetum (*Chrysanthemum segetum*)	Corn Marigold			NT
Groenlandia densa	Opposite-leaved Pondweed		FPO	NT
Hammarbya paludosa	Bog Orchid		FPO	NT
Helianthemum nummularium	Common Rock-rose		FPO	CR
Helianthemum oelandicum	Hoary Rock-rose			NT
Hieracium argentatum	Killarney Hawkweed			VU
Hieracium hartii	Hart's Hawkweed			CR
Hieracium hibernicum	Irish Hawkweed			CR
Hieracium scullyi	Scully's Hawkweed			EN
Hieracium sparsifrons	Kerry Hawkweed			EN
Hierochloe odorata	Holy-grass			RE
Hordelymus europaeus	Wood Barley			CR
Hordeum secalinum	Meadow Barley		FPO	VU
Hottonia palustris	Water-violet			CR
Hydrilla verticillata	Hydrilla		FPO	EN
Hyoscyamus niger	Henbane			NT
Hypericum canadense	Irish St John's-wort		FPO	LC
Hypericum hirsutum	Hairy St John's-wort		FPO	VU
Hypochaeris glabra	Smooth Cat's-ear			EN
Hypopitys monotropa	Yellow Bird's-nest			NT
Inula salicina	Irish Fleabane		FPO	CR
Juncus compressus	Round-fruited Rush			CR
Juncus filiformis	Thread Rush			VU
Lamium confertum	Northern Dead-nettle			NT

Species name	Common name	EU HD	FPO	Red List Status
Lathyrus japonicus	Sea Pea		FPO	VU
Lepidium latifolium	Dittander			VU
Ligusticum scoticum	Scots Lovage			NT
Limonium recurvum subsp. *portlandicum*	Irish Sea-lavender			VU
Limosella aquatica	Mudwort		FPO	LC
Linaria repens	Pale Toadflax			NT
Linaria vulgaris	Common Toadflax			NT
Linum bienne	Pale Flax			NT
Linum radiola (*Radiola linoides*)	Allseed			NT
Lithospermum officinale	Common Gromwell			NT
Logfia minima (*Filago minima*)	Small Cudweed		FPO	NT
Lolium temulentum	Darnel			EN
Lotus subbiflorus (*Lotus hispidus*)	Hairy Bird's-foot-trefoil		FPO	NT
Luronium natans	Floating Water-plantain	II IV		NE
Luzula pallescens (*Luzula pallidula*)	Fen Wood-rush			RE
Lycopsis arvensis (*Anchusa arvensis*)	Bugloss			NT
Lysimachia minima (*Centunculus minimus*)	Chaffweed			NT
Malva neglecta	Dwarf Mallow			NT
Matthiola sinuata	Sea Stock			RE*
Melampyrum sylvaticum	Small Cow-wheat			EN
Mentha pulegium	Pennyroyal		FPO	EN
Mertensia maritima	Oysterplant		FPO	VU
Mibora minima	Early Sand-grass			VU
Micranthes nivalis (*Saxifraga nivalis*)	Alpine Saxifrage		FPO	CR
Minuartia recurva	Recurved Sandwort		FPO	VU
Misopates orontium	Lesser Snapdragon		FPO	EN
Najas flexilis	Slender Naiad	II IV	FPO	NT
Neotinea maculata	Dense-flowered Orchid			NT
Oenanthe fistulosa	Tubular Water-dropwort			NT
Oenanthe pimpinelloides	Corky-fruited Water-dropwort			NT
Omalotheca sylvatica (*Gnaphalium sylvaticum*)	Heath Cudweed		FPO	EN
Ophrys insectifera	Fly Orchid			NT
Orobanche rapum-genistae	Greater Broomrape			NT
Orthilia secunda	Serrated Wintergreen			VU
Parapholis incurva	Curved Hard-grass			EN
Parentucellia viscosa	Yellow Bartsia			NT
Poa alpina	Alpine Meadow-grass			EN
Polygonum maritimum	Sea Knotgrass			RE
Pseudorchis albida	Small-white Orchid		FPO	VU
Puccinellia fasciculata	Borrer's Saltmarsh-grass		FPO	NT
Pyrola media	Intermediate Wintergreen			NT

Species name	Common name	EU HD	FPO	Red List Status
Pyrola minor	Common Wintergreen			NT
Pyrola rotundifolia	Round-leaved Wintergreen			NT
Pyrola rotundifolia subsp. *maritima*	Round-leaved Wintergreen		FPO	VU
Pyrola rotundifolia subsp. *rotundifolia*	Round-leaved Wintergreen			NT
Ranunculus baudotii	Brackish Water-crowfoot			NT
Ranunculus fluitans	River Water-crowfoot			VU
Ranunculus penicillatus subsp. *pseudofluitans*	Stream Water-crowfoot			VU
Ranunculus tripartitus	Three-lobed Crowfoot			CR
Rhynchospora fusca	Brown Beak-sedge			NT
Roemeria argemone (*Papaver argemone*)	Prickly Poppy			VU
Roemeria hispida (*Papaver hybridum*)	Rough Poppy		FPO	RE*[neo]
Rubus chamaemorus	Cloudberry			CR
Rumex acetosa subsp. *hibernicus*	Irish Sorrel			NT
Rumex maritimus	Golden Dock			NT
Rumex pulcher	Fiddle Dock			VU
Salix herbacea	Dwarf Willow			NT
Salix phylicifolia	Tea-leaved Willow			EN
Sanguisorba officinalis	Great Burnet		FPO	VU
Sarcocornia perennis (*Arthrocnemon perenne*)	Perennial Glasswort		FPO	VU
Saussurea alpina	Alpine Saw-wort			VU
Saxifraga granulata	Meadow Saxifrage		FPO	RE*
Saxifraga hirculus	Marsh Saxifrage	II IV	FPO	NT
Saxifraga rosacea	Irish Saxifrage			NT
Saxifraga rosacea subsp. *hartii* (*Saxifraga hartii*)	Hart's Saxifrage		FPO	VU
Saxifraga rosacea subsp. *rosacea*	Irish Saxifrage			NT
Scandix pecten-veneris	Shepherd's-needle			RE
Scheuchzeria palustris	Rannoch-rush			RE
Schoenoplectus triqueter (*Scirpus triqueter*)	Triangular Club-rush		FPO	NT
Scirpus sylvaticus	Wood Club-rush			NT
Scleranthus annuus	Annual Knawel		FPO	VU
Scrophularia umbrosa	Green Figwort			NT
Serratula tinctoria	Saw-wort			RE
Silene gallica	Small-flowered Catchfly			VU
Silybum marianum	Milk Thistle			NT
Simethis mattiazzii (*Simethis planifolia*)	Kerry Lily		FPO	NT
Sorbus anglica	English Whitebeam			EN
Sorbus devoniensis	Devon Whitebeam			EN
Sorbus hibernica	Irish Whitebeam			VU
Sorbus rupicola	Rock Whitebeam			VU
Sorbus scannelliana	Scannell's Whitebeam			CR
Sparganium natans	Least Bur-reed			NT

Species name	Common name	EU HD	FPO	Red List Status
Spiranthes romanzoffiana	Irish Lady's-tresses		FPO	NT
Spiranthes spiralis	Autumn Lady's-tresses			NT
Subularia aquatica	Awlwort			VU
Teesdalia nudicaulis	Shepherd's Cress			EN
Torilis nodosa	Knotted Hedge-parsley			NT
Trifolium glomeratum	Clustered Clover		FPO	EN
Trifolium scabrum	Rough Clover			NT
Trifolium subterraneum	Subterranean Clover		FPO	VU
Trocdaris verticillata (*Carum verticillatum*)	Whorled Caraway			NT
Trollius europaeus	Globeflower		FPO	NT
Valerianella dentata	Narrow-fruited Cornsalad			VU
Valerianella rimosa	Broad-fruited Cornsalad			CR
Verbena officinalis	Vervain			NT
Veronica agrestis	Green Field-speedwell			NT
Vicia orobus	Wood Bitter-vetch		FPO	VU
Viola hirta	Hairy Violet		FPO	VU
Viola lactea	Pale Dog-violet		FPO	VU
Viola lutea	Mountain Pansy			VU
Viola stagnina (*Viola persicifolia*)	Fen Violet			NT
Wahlenbergia hederacea	Ivy-leaved Bellflower			NT

3.2 Ferns and Fern-allies (Pteridophytes)

The latest Red List assessment of the Irish ferns and fern-allies is Wyse Jackson *et al.* (2016), the previous assessment of these being by Curtis and McGough (1988). Scientific names in this checklist (Table 6) follow Stace (2019). The scientific name for Killarney Fern used in other recent works is provided in parentheses. Common names follow those given in Scannell & Synnott (1987). The relevant national legislation is the Wildlife Act (1976), as amended, and the Flora (Protection) Order. The Flora (Protection) Order, 2015 (S.I. No. 356 of 2015) lists one hybrid and seven species of ferns and fern-allies.

Table 6 Checklist of Ferns and Fern-allies (Pteridophytes)

Species name	Common name	EU HD		FPO	Red List Status
Asplenium obovatum	Lanceolate Spleenwort			FPO	VU
Asplenium onopteris	Irish Spleenwort				VU
Asplenium septentrionale	Forked Spleenwort			FPO	VU
Botrychium lunaria	Moonwort				NT
Cryptogramma crispa	Parsley Fern			FPO	VU
Diphasiastrum alpinum	Alpine Clubmoss		V		NT
Dryopteris remota	Scaly Buckler-fern				RE
Equisetum x *moorei* (*Equisetum hyemale* x *E. ramosissimum*)	Moore's Horsetail			FPO	NT
Gymnocarpium dryopteris	Oak Fern				RE
Gymnocarpium robertianum	Limestone Fern			FPO	CR
Huperzia selago	Fir Clubmoss		V		LC
Isoetes echinospora	Spring Quillwort				NT
Lycopodiella inundata	Marsh Clubmoss		V	FPO	VU
Lycopodium clavatum	Stag's-horn Clubmoss		V		NT
Ophioglossum azoricum	Small Adder's-tongue				NT
Phegopteris connectilis	Beech Fern				NT
Pilularia globulifera	Pillwort			FPO	VU
Polystichum lonchitis	Holly Fern				VU
Thelypteris palustris	Marsh Fern				NT
Trichomanes speciosum (*Vandenboschia speciosa*)	Killarney Fern	II	IV	FPO	LC

3.3 Hornworts and Liverworts

The latest Red List assessment of the Irish hornworts and liverworts is Lockhart *et al.* (2012). The relevant national legislation is the Wildlife Act (1976), as amended, and the Flora (Protection) Order. The Flora (Protection) Order, 2015 (S.I. No. 356 of 2015) lists 25 species of liverworts. Species assessed as RE in Lockhart *et al.* (2012) for which native population/s have since been discovered are indicated as RE*. The checklist of hornworts and liverworts is given in Table 7; all species are liverworts except the hornwort *Anthoceros agrestis*, which is listed first. Nomenclature follows Lockhart *et al.* (2012).

Table 7 Checklist of Hornworts and Liverworts

Species name	Common name	EU HD	FPO	Red List Status
Anthoceros agrestis				VU
Acrobolbus wilsonii	Wilson's Pouchwort		FPO	VU
Adelanthus lindenbergianus	Lindenberg's Featherwort		FPO	VU
Anastrophyllum hellerianum				RE
Aneura mirabilis				VU
Anthelia juratzkana				NT
Barbilophozia atlantica	Atlantic Pawwort		FPO	EN
Barbilophozia barbata				CR
Barbilophozia kunzeana				RE
Bazzania pearsonii	Arch-leaved Whipwort		FPO	VU
Calypogeia integristipula				EN
Calypogeia suecica				RE*
Cephalozia crassifolia	Irish Pincerwort		FPO	EN
Cephalozia loitlesbergeri				VU
Cephalozia pleniceps				VU
Cephaloziella integerrima				VU
Cephaloziella massalongi	Lesser Copperwort		FPO	VU
Cephaloziella nicholsonii	Greater Copperwort		FPO	VU
Cephaloziella rubella				VU
Cephaloziella stellulifera				NT
Cephaloziella turneri				VU
Cladopodiella francisci				VU
Diplophyllum obtusifolium				NT
Douinia ovata				NT
Dumortiera hirsuta				NT
Eremonotus myriocarpus				NT
Fossombronia fimbriata				VU
Fossombronia maritima				NT
Geocalyx graveolens	Turps Pouchwort; Turpswort		FPO	EN
Gymnomitrion concinnatum	Braided Frostwort		FPO	EN
Gymnomitrion corallioides	Coral Frostwort		FPO	CR
Gymnomitrion obtusum				NT
Kurzia sylvatica				NT
Leiocolea bantriensis				NT
Leiocolea fitzgeraldiae				NT
Leiocolea gillmanii	Gillman's Notchwort		FPO	VU
Leiocolea heterocolpos				CR
Leiocolea rutheana var. *rutheana*	Lesser Fen Notchwort		FPO	EN
Lejeunea eckloniana				NT
Lejeunea flava subsp. *moorei*				VU

Species name	Common name	EU HD	FPO	Red List Status
Lejeunea hibernica	Irish Pouncewort		FPO	NT
Lejeunea mandonii	Atlantic Pouncewort		FPO	EN
Lophozia opacifolia				VU
Marchantia polymorpha subsp. *montivagans*	Mountain Liverwort		FPO	EN
Marsupella adusta				NT
Marsupella funckii				NT
Marsupella sphacelata				VU
Marsupella sprucei				VU
Mastigophora woodsia	Wood's Whipwort		FPO	NT
Metzgeria leptoneura				NT
Metzgeria pubescens				VU
Nardia geoscyphus				NT
Odontoschisma elongatum				NT
Pallavicinia lyellii	Ribbonwort; Veilwort		FPO	EN
Petalophyllum ralfsii	Petalwort	II	FPO	LC
Plagiochila carringtonii	Carrington's Featherwort		FPO	EN
Plagiochila heterophylla	Western Featherwort		FPO	EN
Porella cordaeana				NT
Ptilidium pulcherrimum				RE
Radula carringtonii				NT
Radula holtii	Holt's Scalewort		FPO	NT
Riccia crozalsii	Ciliate Crystalwort		FPO	EN
Ricciocarpos natans				NT
Scapania curta				VU
Scapania cuspiduligera				VU
Scapania gymnostomophila				VU
Scapania nimbosa	Cloud Earwort		FPO	EN
Scapania ornithopodioides	Bird's-foot Earwort		FPO	VU
Solenostoma paroicum				NT
Solenostoma sphaerocarpum				NT
Solenostoma subellipticum				NT
Southbya tophacea	Green Blackwort		FPO	CR
Sphenolobopsis pearsonii				NT
Targionia hypophylla				RE
Telaranea europaea				NT
Tritomaria exsecta				VU

3.4 Mosses

The latest Red List assessment of the Irish mosses is Lockhart *et al.* (2012). Species assessed as RE in Lockhart *et al.* (2012) for which native population/s have since been discovered are indicated as RE*. The relevant national legislation is the Wildlife Act (1976), as amended, and the Flora (Protection) Order. The Flora (Protection) Order, 2015 (S.I. No. 356 of 2015) lists 40 species of mosses. All members of the bryophyte family Sphagnaceae in Ireland are protected under Annex V of the EU Habitats Directive (92/43/EEC). The total number of *Sphagnum* species recorded from Ireland is 30 but only those which are on the Irish Red List are included in Table 8 below. Nomenclature follows Lockhart *et al.* (2012).

Table 8 Checklist of Mosses

Species name	Common name	EU HD	FPO	Red List Status
Abietinella abietina var. *abietina*				EN
Abietinella abietina var. *hystricosa*				NT
Acaulon muticum				RE
Aloina ambigua				EN
Aloina rigida				RE
Amblystegium confervoides				NT
Amphidium lapponicum				VU
Andreaea megistospora				VU
Antitrichia curtipendula				NT
Aongstroemia longipes				CR
Arctoa fulvella				VU
Atrichum angustatum				RE
Atrichum tenellum				NT
Aulacomnium androgynum				VU
Bartramia halleriana	Haller's Apple-moss		FPO	RE*
Bartramia ithyphylla				VU
Brachydontium trichodes	Bristle-leaf		FPO	EN
Brachytheciastrum velutinum				EN
Bryum bornholmense				NT
Bryum caespiticium				VU
Bryum calophyllum	Blunt Bryum; Matted Bryum		FPO	EN
Bryum dyffrynense				NT
Bryum elegans				VU
Bryum gemmiparum				VU
Bryum intermedium	Many-seasoned Thread-moss		FPO	EN
Bryum knowltonii	Knowlton's Thread-moss		FPO	EN
Bryum moravicum				CR
Bryum riparium				EN
Bryum salinum	Saltmarsh Thread-moss		FPO	CR
Bryum torquescens				VU
Bryum turbinatum				RE

Species name	Common name	EU HD	FPO	Red List Status
Bryum uliginosum	Cernuous Thread-moss		FPO	EN
Bryum warneum	Warne's Thread-moss; Sea Bryum		FPO	EN
Buxbaumia aphylla				RE
Campyliadelphus elodes				NT
Campylopus atrovirens var. *falcatus*				NT
Campylopus schimperi				RE
Campylopus shawii				NT
Campylopus subulatus				VU
Campylostelium saxicola	Bent-moss		FPO	EN
Catoscopium nigritum	Down-looking Moss; Golf-club Moss		FPO	NT
Cinclidium stygium				VU
Conardia compacta				RE
Ctenidium molluscum var. *robustum*				RE
Cyclodictyon laetevirens				NT
Cynodontium jenneri				VU
Dicranella cerviculata				NT
Dicranella crispa				EN
Dicranella grevilleana				NT
Dicranodontium asperulum				VU
Dicranodontium uncinatum				VU
Dicranum undulatum				RE*
Didymodon acutus	Pointed Beard-moss		FPO	EN
Didymodon icmadophilus				RE
Didymodon maximus	Irish Beard-moss		FPO	NT
Didymodon tomaculosus				VU
Didymodon umbrosus				VU
Discelium nudum				NT
Ditrichum cornubicum	Cornish Path-moss		FPO	CR
Ditrichum lineare	Dark Ditrichum		FPO	CR
Ditrichum plumbicola	Lead-moss		FPO	EN
Ditrichum zonatum				EN
Drepanocladus sendtneri				NT
Encalypta alpina				VU
Encalypta ciliata	Fringed Extinguisher-moss		FPO	CR
Encalypta rhaptocarpa	Ribbed Extinguisher-moss		FPO	CR
Encalypta vulgaris				NT
Entosthodon fascicularis				NT
Entosthodon muhlenbergii	Muhlenberg's Cord-moss		FPO	RE
Ephemerum cohaerens	Clustered Earth-moss		FPO	VU

Species name	Common name	EU HD	FPO	Red List Status
Ephemerum crassinervium subsp. *rutheanum*				NT
Ephemerum crassinervium subsp. *sessile*				NT
Ephemerum spinulosum	Prickly Earth-moss		FPO	EN
Eurhynchiastrum pulchellum var. *diversifolium*				RE
Fissidens curvatus				RE
Fissidens exilis				VU
Fissidens fontanus				VU
Fissidens monguillonii				NT
Fissidens polyphyllus				VU
Fissidens rivularis				VU
Fissidens rufulus	Beck Pocket-moss		FPO	EN
Fissidens serrulatus				VU
Fontinalis antipyretica var. *gracilis*				NT
Grimmia anomala				EN
Grimmia atrata	Copper Grimmia		FPO	EN
Grimmia crinita				RE
Grimmia decipiens				NT
Grimmia dissimulata				VU
Grimmia donniana				NT
Grimmia funalis				NT
Grimmia laevigata				RE
Grimmia longirostris				RE*
Grimmia orbicularis				VU
Grimmia ramondii				NT
Grimmia torquata				NT
Hageniella micans				NT
Hamatocaulis vernicosus	Shining Sickle Moss; Varnished Hook-moss; Slender Green Feather-moss	II	FPO	NT
Hedwigia ciliata var. *ciliata*				VU
Hedwigia integrifolia	Green Hoar-moss		FPO	VU
Heterocladium wulfsbergii				NT
Hygroamblystegium fluviatile				NT
Hygroamblystegium humile				EN
Hygroamblystegium varium				NT
Hygrohypnum duriusculum	Broad-leaved Brook-moss		FPO	CR
Hylocomiastrum umbratum				NT
Hymenostylium recurvirostrum var. *insigne*				NT
Hypnum callichroum				NT

Species name	Common name	EU HD	FPO	Red List Status
Hypnum uncinulatum	Hooked Plait-moss		FPO	NT
Isopterygiopsis muelleriana				VU
Kiaeria falcata	Sickle-leaved Fork-moss		FPO	CR
Leptobarbula berica				VU
Leptodon smithii	Prince-of-Wales Feather-moss		FPO	EN
Leptodontium flexifolium				NT
Leucobryum glaucum	White Cushion Moss	V		LC
Meesia triquetra	Three-ranked Hump-moss		FPO	RE*
Meesia uliginosa	Broad-nerved Hump-moss		FPO	EN
Microbryum curvicollum				RE
Microbryum starckeanum				RE
Mnium thomsonii				NT
Molendoa warburgii	Warburg's Moss		FPO	VU
Myurella julacea	Small Mouse-tail Moss		FPO	EN
Myurium hochstetteri				RE
Oedipodium griffithianum	Gouty-moss		FPO	CR
Orthodontium gracile				CR
Orthothecium rufescens				NT
Orthotrichum pallens				EN
Orthotrichum rivulare				NT
Orthotrichum sprucei	Spruce's Bristle-moss		FPO	VU
Orthotrichum stramineum				VU
Oxyrrhynchium schleicheri				CR
Oxyrrhynchium speciosum				NT
Paludella squarrosa	Tufted Fen-moss		FPO	CR
Paraleptodontium recurvifolium				NT
Philonotis arnellii				EN
Philonotis caespitosa				NT
Philonotis cernua				CR
Philonotis rigida				VU
Philonotis tomentella				VU
Physcomitrium sphaericum				VU
Plagiobryum zieri				NT
Plagiomnium cuspidatum				NT
Plagiopus oederianus				CR
Plagiothecium cavifolium				VU
Plagiothecium curvifolium				VU
Plagiothecium denticulatum var. *obtusifolium*				NT
Plagiothecium laetum				VU
Plagiothecium latebricola				VU

Species name	Common name	EU HD	FPO	Red List Status
Plagiothecium platyphyllum				VU
Plasteurhynchium striatulum				NT
Platydictya jungermannioides				NT
Platyhypnidium lusitanicum				NT
Pleurochaete squarrosa				NT
Pogonatum nanum				EN
Pohlia andalusica	Roth's Thread-moss		FPO	EN
Pohlia elongata var. *elongata*				NT
Pohlia elongata var. *greenii*				EN
Pohlia filum				VU
Pohlia proligera				RE
Pohlia wahlenbergii var. *glacialis*				RE
Pseudocalliergon lycopodioides				VU
Pseudocalliergon trifarium				VU
Pterigynandrum filiforme				RE
Pterygoneurum lamellatum				RE
Pterygoneurum ovatum				RE
Ptilium crista-castrensis	Ostrich-plume Feather-moss		FPO	CR
Racomitrium canescens				VU
Racomitrium elongatum				VU
Racomitrium macounii subsp. *alpinum*				VU
Rhabdoweisia crispata				NT
Rhabdoweisia fugax				VU
Rhizomnium pseudopunctatum				NT
Rhodobryum roseum				NT
Rhynchostegiella curviseta				RE
Rhynchostegium megapolitanum				NT
Rhytidiadelphus subpinnatus				RE
Rhytidium rugosum				VU
Schistidium agassizii				VU
Schistidium platyphyllum				VU
Schistidium strictum				NT
Schistidium trichodon				VU
Scleropodium cespitans				NT
Scleropodium touretii	Glass-wort Feather-moss		FPO	EN
Scopelophila cataractae				VU
Seligeria calcarea				VU
Seligeria calycina				RE
Seligeria oelandica				VU
Seligeria patula				NT
Sematophyllum demissum				NT

Species name	Common name	EU HD	FPO	Red List Status
Sematophyllum substrumulosum				VU
Sphagnum ALL SPECIES		V		
Sphagnum affine		V		VU
Sphagnum flexuosum		V		VU
Sphagnum girgensohnii		V		NT
Sphagnum platyphyllum		V		NT
Sphagnum russowii		V		NT
Sphagnum subsecundum		V		NT
Sphagnum teres		V		NT
Sphagnum warnstorfii		V		VU
Syntrichia princeps				RE
Tayloria tenuis				RE
Tetrodontium brownianum				NT
Thuidium recognitum				VU
Timmia norvegica				VU
Tomentypnum nitens				VU
Tortella densa				NT
Tortella inclinata	Bent Crisp-moss		FPO	EN
Tortula atrovirens				NT
Tortula cuneifolia				CR
Tortula lanceola				CR
Tortula marginata				NT
Tortula modica				VU
Tortula protobryoides				RE
Tortula vahliana				RE
Tortula wilsonii				RE
Ulota coarctata	Club Pincushion		FPO	CR
Ulota drummondii				RE
Weissia longifolia var. *angustifolia*				VU
Weissia rostellata				NT
Weissia rutilans				VU

3.5 Algae

The latest Red List assessment for the Irish charophytes is Stewart & Church (1992). Names used for charophytes in Table 9 follow Stewart & Church (1992) and Bryant & Stewart (2011). Stewart & Church (1992) used a previous IUCN assessment system and categories, which are denoted by the following abbreviations: Ex=Extinct, E=Endangered, V=Vulnerable; R=Rare; I=Indeterminate (E, V or R but not enough information to say which). Other species of algae have not been assessed. The relevant national legislation is the Wildlife Act (1976), as amended, and the Flora (Protection) Order. The Flora (Protection) Order, 2015 (S.I. No. 356 of 2015) lists two species of charophyte.

Table 9 Checklist of Algae

Species name	Common name	EU HD	FPO	Red List Status
Chara canescens	Bearded Stonewort			V
Chara connivens	Convergent Stonewort			I
Chara denudata	Naked Stonewort			R
Chara muscosa	Mossy Stonewort			Ex
Chara tomentosa	Coral Stonewort			R
Lamprothamnium papulosum	Foxtail Stonewort		FPO	V
Lithothamnion corralloides	Maërl	V		
Nitella gracilis	Slender Stonewort		FPO	V
Nitella mucronata	Pointed Stonewort			R
Nitella spanioclema	Few-branched Stonewort			I
Nitella tenuissima	Dwarf Stonewort			V
Phymatolithon calcareum	Maërl	V		
Tolypella intricata	Tassel Stonewort			V
Tolypella prolifera	Great Tassel Stonewort			Ex

3.6 Lichens

A Red List assessment of the Irish lichen species has not been completed. Five species of the genus *Cladonia* subgenus *Cladina* (a grouping that is not now universally accepted), Reindeer Lichens or Reindeer Mosses, occur in Ireland and are protected under Annex V of the EU Habitats Directive (92/43/EEC). The relevant national legislation is the Wildlife Act (1976), as amended, and the Flora (Protection) Order. The Flora (Protection) Order, 2015 (S.I. No. 356 of 2015) lists a single species of lichen. Nomenclature follows Smith *et al*. (2009).

Table 10 Checklist of Lichens

Species name	Common name	EU HD	FPO
Cladonia arbuscula		V	
Cladonia azorica		V	
Cladonia ciliata		V	
Cladonia portentosa		V	
Cladonia rangiferina		V	
Fulgensia fulgens	Scrambled-egg Lichen		FPO

4 Vertebrates

The vertebrate checklists are presented in the following order: mammals, birds, reptiles, amphibians, freshwater fish, cartilaginous fish (sharks, skates, rays and chimaeras).

4.1 Mammals

The Red List of Irish terrestrial mammals was updated in 2019 (Marnell *et al.*, 2019). This assessment included seals but did not cover the cetaceans. All species of cetacaeans are fully protected in Irish waters by national and European legislation. The relevant national legislation is the Wildlife Act (1976), as amended. All cetaceans and all bats are protected under Annex IV of the EU Habitats Directive, but only established Irish species are listed below. Harbour Porpoise, Common Bottlenose Dolphin, Grey Seal, Harbour Seal, Otter and Lesser Horseshoe Bat are also protected under Annex II of the EU Habitats Directive. Nomenclature follows Wilson & Reeder (2005).

Table 11 Checklist of Mammals

Species name	Common name	EU HD	WA	Red List Status
Balaenoptera acutorostrata	Minke Whale	IV	WA	NE
Balaenoptera borealis	Sei Whale	IV	WA	NE
Balaenoptera musculus	Blue Whale	IV	WA	NE
Balaenoptera physalus	Fin Whale	IV	WA	NE
Canis lupus	Grey Wolf			RE
Cervus elaphus	Red Deer		WA	LC
Cervus nippon	Sika Deer		WA	NA
Dama dama	Fallow Deer		WA	LC
Delphinapterus leucas	Beluga/White Whale	IV	WA	NE
Delphinus delphis	Short-beaked Common Dolphin	IV	WA	NE
Erinaceus europaeus	Hedgehog		WA	LC
Eubalaena glacialis	Northern Right Whale	IV	WA	NE
Globicephala melas	Long-finned Pilot Whale	IV	WA	NE
Grampus griseus	Risso's Dolphin	IV	WA	NE
Halichoerus grypus	Grey Seal	II V	WA	LC
Hyperoodon ampullatus	Northern Bottlenose Whale	IV	WA	NE
Kogia breviceps	Pygmy Sperm Whale	IV	WA	NE
Lagenorhynchus acutus	White-sided Dolphin	IV	WA	NE
Lagenorhynchus albirostris	White-beaked Dolphin	IV	WA	NE
Lepus europaeus	Brown Hare		WA	NA
Lepus timidus	Irish/Mountain Hare	V	WA	LC
Lutra lutra	Otter	II IV	WA	LC
Martes martes	Pine Marten	V	WA	LC
Megaptera novaeangliae	Humpback Whale	IV	WA	NE
Meles meles	Badger		WA	LC
Mesoplodon bidens	Sowerby's Beaked Whale	IV	WA	NE

Species name	Common name	EU HD			WA	Red List Status
Mesoplodon europaeus	Gervais' Beaked Whale		IV		WA	NE
Mesoplodon mirus	True's Beaked Whale		IV		WA	NE
Mustela erminea	Stoat				WA	LC
Myotis daubentoni	Daubenton's Bat		IV		WA	LC
Myotis mystacinus	Whiskered Bat		IV		WA	LC
Myotis nattereri	Natterer's Bat		IV		WA	LC
Nyctalus leisleri	Leisler's Bat		IV		WA	LC
Orcinus orca	Killer Whale		IV		WA	NE
Phoca vitulina	Harbour Seal	II		V	WA	LC
Phocoena phocoena	Harbour Porpoise	II	IV		WA	NE
Physeter macrocephalus	Sperm Whale		IV		WA	NE
Pipistrellus nathusii	Nathusius' Pipistrelle		IV		WA	LC
Pipistrellus pipistrellus	Common Pipistrelle		IV		WA	LC
Pipistrellus pygmaeus	Soprano Pipistrelle		IV		WA	LC
Plecotus auritus	Brown Long-eared Bat		IV		WA	LC
Pseudorca crassidens	False Killer Whale		IV		WA	NE
Rattus rattus	Black or Ship Rat					VU
Rhinolophus hipposideros	Lesser Horseshoe Bat	II	IV		WA	LC
Sciurus vulgaris	Red Squirrel				WA	LC
Sorex minutus	Pygmy Shrew				WA	LC
Stenella coeruleoalba	Striped Dolphin		IV		WA	NE
Tursiops truncatus	Common Bottlenose Dolphin	II	IV		WA	NE
Ziphius cavirostris	Cuvier's Beaked Whale		IV		WA	NE

4.2 Birds

All species of wild bird that occur naturally in Ireland are fully protected at all times by the Wildlife Act and relevant amending legislation.

This protection may be lessened by other legislation. Some bird species are listed on the Open Seasons Order. This is subject to amendment and the latest version can be found on the NPWS website at https://www.npws.ie/legislation/irish-law/open-seasons-order.

Similarly, all birds naturally occurring in the wild state are protected by the EU Birds Directive but derogations may reduce protection for specified reasons. Two derogations from protective measures can apply, one where birds are causing damage to crops, livestock, flora and fauna or represent a threat to public health and safety, and a second where birds represent a threat to air safety. As these are subject to annual review, the species covered are not listed here but the most recent version of these can be found on the NPWS website at https://www.npws.ie/legislation/irish-law/eu-birds-directive-derogations.

The checklist includes species which a) are Amber or Red on the most recent BoCCI (Colhoun & Cummins, 2013) and b) species which are on Annex I and which are reported in the Article 12 report. Some Annex I species that have been recorded in Ireland irregularly and as vagrants are, therefore, not included in this checklist. The BoCCI assessment is given for all species. The taxonomy and scientific

nomenclature used in this report follow that used for Article 12 reporting under the EU Bird's Directive. Common names follow normal usage in Ireland. The EU Bird List incorporates the taxonomic and nomenclatural changes proposed in del Hoyo & Collar (2014) and del Hoyo & Collar (2016).

Table 12 Checklist of Birds

Species name	Common name	EU BD	BoCCI
Accipiter gentilis	Goshawk		Amber
Accipiter nisus	Sparrowhawk		Amber
Acrocephalus scirpaceus	Reed Warbler		Amber
Actitis hypoleucos	Common Sandpiper		Amber
Alauda arvensis	Skylark		Amber
Alca torda	Razorbill		Amber
Alcedo atthis	Kingfisher	I	Amber
Anas acuta	Pintail		Red
Anas crecca	Teal		Amber
Anser albifrons flavirostris	Greenland White-fronted Goose	I	Amber
Anser anser	Greylag Goose		Amber
Anthus pratensis	Meadow Pipit		Red
Apus apus	Swift		Amber
Aquila chrysaetos	Golden Eagle	I	Red
Ardenna grisea	Sooty Shearwater		Red
Asio flammeus	Short-eared Owl	I	Amber
Aythya ferina	Pochard		Red
Aythya fuligula	Tufted Duck		Red
Aythya marila	Scaup		Amber
Branta bernicla hrota	Light-bellied Brent Goose		Amber
Branta leucopsis	Barnacle Goose	I	Amber
Bucephala clangula	Goldeneye		Red
Calidris alpina alpina	Dunlin		Red
Calidris alpina schinzii	Dunlin	I	Red
Calidris canutus	Knot		Amber
Calidris pugnax (*Philomachus pugnax*)	Ruff	I	Amber
Calonectris borealis (*Calonectris diomedea*)	Cory's Shearwater	I	Amber
Caprimulgus europaeus	Nightjar	I	Red
Catharacta skua	Great Skua		Amber
Cepphus grylle	Black Guillemot		Amber
Charadrius dubius	Little Ringed Plover		Amber
Chloris chloris	Greenfinch		Amber
Circus aeruginosus	Marsh Harrier	I	Amber
Circus cyaneus	Hen Harrier	I	Amber
Clangula hyemalis	Long-tailed Duck		Red
Columba oenas	Stock Dove		Amber
Coturnix coturnix	Quail		Red

Species name	Common name	EU BD	BoCCI
Crex crex	Corncrake	I	Red
Cygnus columbianus bewickii	Bewick's Swan	I	Red
Cygnus cygnus	Whooper Swan	I	Amber
Cygnus olor	Mute Swan		Amber
Delichon urbicum	House Martin		Amber
Dendrocopos major	Great Spotted Woodpecker		Amber
Egretta garzetta	Little Egret	I	Green
Emberiza citrinella	Yellowhammer		Red
Erithacus rubecula	Robin		Amber
Falco columbarius	Merlin	I	Amber
Falco peregrinus	Peregrine	I	Green
Falco tinnunculus	Kestrel		Amber
Ficedula hypoleuca	Pied Flycacher		Amber
Fratercula arctica	Puffin		Amber
Gallinago gallinago	Snipe		Amber
Gavia arctica	Black-throated Diver	I	Amber
Gavia immer	Great Northern Diver	I	Amber
Gavia stellata	Red-throated Diver	I	Amber
Haematopus ostralegus	Oystercatcher		Amber
Haliaeetus albicilla	White-tailed Eagle	I	Red
Hirundo rustica	Swallow		Amber
Hydrobates leucorhous (*Oceanodroma leucorhoa*)	Leach's Storm Petrel	I	Red
Hydrobates pelagicus	Storm Petrel	I	Amber
Hydrocoloeus minutus (*Larus minutus*)	Little Gull	I	Amber
Lagopus lagopus	Red Grouse		Red
Larus argentatus	Herring Gull		Red
Larus canus	Common Gull		Amber
Larus fuscus	Lesser Black-backed Gull		Amber
Larus marinus	Great Black-backed Gull		Amber
Larus melanocephalus	Mediterranean Gull	I	Amber
Larus ridibundus	Black-headed Gull		Red
Limosa lapponica	Bar-tailed Godwit	I	Amber
Limosa limosa	Black-tailed Godwit		Amber
Linaria cannabina	Linnet		Amber
Linaria flavirostris	Twite		Red
Lymnocryptes minimus	Jack Snipe		Amber
Mareca penelope	Wigeon		Red
Mareca strepera	Gadwall		Amber
Melanitta fusca	Velvet Scoter		Red
Melanitta nigra	Common Scoter		Red
Mergellus albellus	Smew	I	Amber
Mergus merganser	Goosander		Amber

Species name	Common name	EU BD	BoCCI
Milvus milvus	Red Kite	I	Amber
Morus bassanus	Gannet		Amber
Motacilla cinerea	Grey Wagtail		Red
Motacilla flava	Yellow Wagtail		Amber
Muscicapa striata	Spotted Flycatcher		Amber
Numenius arquata	Curlew		Red
Oenanthe oenanthe	Wheatear		Amber
Passer domesticus	House Sparrow		Amber
Passer montanus	Tree Sparrow		Amber
Perdix perdix	Grey Partridge		Red
Phalacrocorax aristotelis	Shag		Amber
Phalacrocorax carbo	Cormorant		Amber
Phalaropus lobatus	Red-necked Phalarope	I	Red
Phoenicurus phoenicurus	Common Redstart		Amber
Phylloscopus sibilatrix	Wood Warbler		Amber
Pluvialis apricaria	Golden Plover	I	Red
Pluvialis squatarola	Grey Plover		Amber
Podiceps auritus	Slavonian Grebe	I	Amber
Podiceps cristatus	Great Crested Grebe		Amber
Podiceps nigricollis	Black-necked Grebe		Red
Porzana porzana	Spotted Crake	I	Amber
Puffinus mauretanicus	Balearic Shearwater	I	Red
Puffinus puffinus	Manx Shearwater		Amber
Pyrrhocorax pyrrhocorax	Chough	I	Amber
Regulus regulus	Goldcrest		Amber
Riparia riparia	Sand Martin		Amber
Rissa tridactyla	Kittiwake		Amber
Saxicola rubetra	Whinchat		Red
Saxicola torquatus	Stonechat		Amber
Scolopax rusticola	Woodcock		Red
Somateria mollissima	Eider		Amber
Spatula clypeata	Shoveler		Red
Spatula querquedula	Garganey		Amber
Sterna dougallii	Roseate Tern	I	Amber
Sterna hirundo	Common Tern	I	Amber
Sterna paradisaea	Arctic Tern	I	Amber
Sternula albifrons	Little Tern	I	Amber
Streptopelia turtur	Turtle Dove		Amber
Sturnus vulgaris	Starling		Amber
Sylvia curruca	Lesser Whitethroat		Amber
Tachybaptus ruficollis	Little Grebe		Amber
Tadorna tadorna	Shelduck		Amber

Species name	Common name	EU BD	BoCCI
Thalasseus sandvicensis (*Sterna sandvicensis*)	Sandwich Tern	I	Amber
Tringa erythropus	Spotted Redshank		Amber
Tringa glareola	Wood Sandpiper	I	Amber
Tringa totanus	Redshank		Red
Turdus torquatus	Ring Ouzel		Red
Turdus viscivorus	Mistle Thrush		Amber
Tyto alba	Barn Owl		Red
Uria aalge	Guillemot		Amber
Vanellus vanellus	Lapwing		Red

4.3 Reptiles

Nomenclature and the latest Red List assessment of the Irish marine and terrestrial reptiles are from King *et al.* (2011). The relevant national legislation is the Wildlife Act (1976), as amended. The Common Lizard was added to the Wildlife Act by regulations made in S.I. No. 282 of 1980, and marine turtles were added by S.I. No. 112 of 1990.

Table 13 Checklist of Reptiles

Species name	Common name	EU HD		WA	Red List Status
Caretta caretta	Loggerhead Turtle	II	IV	WA	NA
Dermochelys coriacea	Leatherback Turtle		IV	WA	LC
Eretmochelys imbricata	Hawksbill Turtle		IV	WA	NA
Lepidochelys kempii	Kemp's Ridley Turtle		IV	WA	NA
Zootoca vivipara (*Lacerta vivipara*)	Common Lizard			WA	LC

4.4 Amphibians

Nomenclature and the latest Red List assessment of the Irish amphibians are from King *et al.* (2011). The relevant national legislation is the Wildlife Act (1976), as amended. The Common Frog and Common Newt were added to the Wildlife Act, 1976 by regulations made in S.I. No. 282 of 1980.

Table 14 Checklist of Amphibians

Species name	Common name	EU HD		WA	Red List Status
Epidalea calamita (*Bufo calamita*)	Natterjack Toad	IV		WA	EN
Lissotriton vulgaris (*Triturus vulgaris*)	Common Newt			WA	LC
Rana temporaria	Common Frog		V	WA	LC

4.5 Freshwater Fish

Nomenclature and the latest Red List assessment of the Irish freshwater fish are from King *et al.* (2011). The EU HD Annex provisions only refers to Atlantic Salmon *Salmo salar* in freshwater. Many freshwater fish species are listed on the Wildlife (Fish and Aquatic Invertebrate Animals) (Exclusion) Regulations, 2001 (S.I. No. 372 of 2001), which excludes them from the provisions of the Wildlife (Amendment) Act, 2000.

Table 15 Checklist of Freshwater Fish

Species name	Common name	EU HD		Red List Status
Alosa alosa	Allis Shad	II	V	DD
Alosa fallax	Twaite Shad	II	V	VU
Alosa fallax killarnensis	Killarney Shad	II	V	VU
Anguilla anguilla	European Eel			CR
Coregonus autumnalis	Pollan		V	VU
Lampetra fluviatilis	River Lamprey	II	V	LC
Lampetra planeri	Brook Lamprey	II		LC
Petromyzon marinus	Sea Lamprey	II		NT
Salmo salar	Atlantic Salmon	II	V	VU
Salvelinus alpinus	Arctic Charr			VU

4.6 Cartilaginous Fish (Sharks, Skates, Rays and Chimaeras)

Nomenclature and the latest Red List assessment of the Irish marine cartilaginous fish are from Clarke *et al*. (2016). Many marine cartilaginous fish are listed on the Wildlife (Fish and Aquatic Invertebrate Animals) (Exclusion) Regulations, 2001 (S.I. No. 372 of 2001), which excludes them from the provisions of the Wildlife (Amendment) Act, 2000.

Table 16 Checklist of Cartilaginous Fish (Sharks, Skates, Rays and Chimaeras)

Species name	Common name	Red List Status
Apristurus manis	Ghost Shark	NT
Apristurus melanoasper	Black Roughscale Catshark	NT
Apristurus microps	Smalleye Catshark	NT
Centrophorus squamosus	Leafscale Gulper Shark	EN
Centroscymnus coelolepis	Portuguese Dogfish	CR
Centroselachus crepidater	Longnose Velvet Dogfish	VU
Cetorhinus maximus	Basking Shark	EN
Chimaera monstrosa	Rabbitfish	NT
Chimaera opalescens	Opal Chimaera	NT
Dalatias licha	Kitefin Shark	VU
Dasyatis pastinaca	Common Stingray	EN
Deania calcea	Birdbeak Dogfish	NT

Species name	Common name	Red List Status
Dipturus batis (*Dipturus flossada*)	Common Skate	CR
Dipturus intermedia	Flapper Skate	CR
Dipturus nidarosiensis	Norwegian Skate	NT
Dipturus oxyrinchus	Longnosed Skate	VU
Etmopterus princeps	Greater Lantern shark	NT
Galeorhinus galeus	Tope	VU
Hexanchus griseus	Bluntnose Sixgill Shark	NT
Hydrolagus mirabilis	Large-eyed Rabbitfish	NT
Lamna nasus	Porbeagle	CR
Leucoraja circularis	Sandy Ray	NT
Leucoraja fullonica	Shagreen Ray	VU
Leucoraja naevus	Cuckoo Ray	VU
Malacoraja kreffti	Krefft's Ray	NT
Neoraja caerulea	Blue Ray	NT
Oxynotus paradoxus	Sharp-back Shark	NT
Prionace glauca	Blue Shark	NT
Raja brachyura	Blonde Ray	NT
Raja undulata	Undulate Skate	EN
Rhinochimaera atlantica	Straightnose Rabbitfish	NT
Rostroraja alba	White Skate	CR
Scymnodon ringens	Knifetooth Dogfish	NT
Squalus acanthias	Spurdog	EN
Squatina squatina	Angel Shark	CR
Tetronarce nobiliana	Electric Ray	NT

5 Insects

Insect checklists are provided in alphabetical order, by the group's common name.

5.1 Bees (Hymenoptera, Apoidea)

The latest Red List assessment of the Irish bees is FitzPatrick *et al*. (2006). Nomenclature, both scientific and common names, follows Falk & Lewington (2015). Species assessed as RE in FitzPatrick *et al*. (2006) for which native population/s have since been discovered are indicated as RE*.

Table 17 Checklist of Bees (Hymenoptera, Apoidea)

Species name	Common name	Red List Status
Andrena angustior	Groove-faced Mining Bee	VU
Andrena barbilabris	Sandpit Mining Bee	NT
Andrena coitana	Small Flecked Mining Bee	VU
Andrena denticulata	Grey-banded Mining Bee	VU
Andrena fucata	Painted Mining Bee	NT
Andrena fulva	Tawny Mining Bee	RE*
Andrena fuscipes	Heather Mining Bee	VU
Andrena humilis	Buff-tailed Mining Bee	CR
Andrena marginata	Small Scabious Mining Bee	CR
Andrena nigroaenea	Buffish Mining Bee	VU
Andrena praecox	Small Sallow Mining Bee	VU
Andrena rosae	Perkin's Mining Bee	RE
Andrena semilaevis	Shiny-margined Mini-miner	VU
Andrena trimmerana	Trimmer's Mining Bee	CR
Bombus barbutellus	Barbut's Cuckoo Bee	EN
Bombus bohemicus	Gypsy Cuckoo Bee	NT
Bombus campestris	Field Cuckoo Bee	VU
Bombus distinguendus	Large Yellow Bumblebee	EN
Bombus lapidarius	Red-tailed Bumblebee	NT
Bombus muscorum	Moss Carder Bee	NT
Bombus ruderarius	Red-shanked Bumblebee	VU
Bombus rupestris	Red-tailed Cuckoo Bee	EN
Bombus sylvarum	Shrill Carder Bee	EN
Coelioxys elongata	Dull-vented Sharp-tail Bee	EN
Colletes floralis	Northern Colletes	VU
Colletes similis	Bare-saddled Colletes	NT
Halictus tumulorum	Bronze Furrow Bee	NT
Hylaeus brevicornis	Short-horned Yellow-face Bee	EN
Hylaeus hyalinatus	Hairy Yellow-face Bee	VU
Lasioglossum lativentre	Furry-claspered Furrow Bee	CR

Species name	Common name	Red List Status
Lasioglossum nitidiusculum	Tufted Furrow Bee	VU
Lasioglossum rufitarse	Rufous-footed Furrow Bee	VU
Megachile centuncularis	Patchwork Leafcutter Bee	NT
Megachile maritima	Coast Leafcutter Bee	NT
Megachile willughbiella	Willoughy's Leafcutter Bee	NT
Nomada argentata	Silver-sided Nomad Bee	CR
Nomada goodeniana	Gooden's Nomad Bee	EN
Nomada obtusifrons	Flat-ridged Nomad Bee	EN
Nomada panzeri	Panzer's Nomad Bee	NT
Nomada sheppardana	Sheppard's Nomad Bee	RE
Nomada striata	Blunt-jawed Nomad Bee	EN
Osmia aurulenta	Gold-fringed Mason Bee	NT
Sphecodes ferruginatus	Dull-headed Blood Bee	EN
Sphecodes gibbus	Dark-winged Blood Bee	CR
Sphecodes hyalinatus	Furry-bellied Blood Bee	VU

5.2 Butterflies (Lepidoptera)

Nomenclature and the latest Red List assessment of the Irish butterflies are from Regan *et al*. (2010).

Table 18 Checklist of Butterflies (Lepidoptera)

Species name	Common name	EU HD	Red List Status
Argynnis aglaja	Dark Green Fritillary		VU
Boloria euphrosyne	Pearl-bordered Fritillary		EN
Coenonympha pamphilus	Small Heath		NT
Coenonympha tullia	Large Heath		VU
Cupido minimus	Small Blue		EN
Erebia epiphron	Mountain Ringlet		RE
Erynnis tages	Dingy Skipper		NT
Euphydryas aurinia	Marsh Fritillary	II	VU
Hipparchia semele	Grayling		NT
Lasiommata megera	Wall		EN
Leptidea sinapis	Wood White		NT
Pyronia tithonus	Gatekeeper		NT

5.3 Damselflies and Dragonflies (Odonata)

Nomenclature and the latest Red List assessment of the Irish Odonata are from Nelson *et al*. (2011).

Table 19 Checklist of Damselflies and Dragonflies (Odonata)

Species name	Common name	Red List Status
Coenagrion lunulatum	Irish Damselfly/Crescent Bluet	VU
Cordulia aenea	Downy Emerald	EN
Ischnura pumilio	Scarce Blue-tailed Damselfly/Small Bluetail	VU
Lestes dryas	Scarce Emerald Damselfly/Robust Spreadwing	NT
Somatochlora arctica	Northern Emerald	EN

5.4 Macro-moths (Lepidoptera)

Nomenclature and the latest Red List assessment of the Irish macro-moths are from Allen *et al*. (2016).

Table 20 Checklist of Macro-moths (Lepidoptera)

Species name	Common name	Red List Status
Actebia praecox	Portland Moth	CR
Adscita statices	Forester	EN
Agrotis cinerea	Light Feathered Rustic	CR
Agrotis clavis	Heart & Club	NT
Alcis jubata	Dotted Carpet	VU
Amphipyra tragopoginis	Mouse Moth	NT
Apamea oblonga	Crescent Striped	EN
Apamea sublustris	Reddish Light Arches	NT
Aporophyla australis	Feathered Brindle	VU
Asteroscopus sphinx	Sprawler	NT
Brachylomia viminalis	Minor Shoulder-knot	VU
Calamia tridens	Burren Green	NT
Camptogramma bilineata	Yellow Shell	NT
Carsia sororiata	Manchester Treble-bar	CR
Catarhoe cuculata	Royal Mantle	VU
Clostera pigra	Small Chocolate-tip	NT
Coenocalpe lapidata	Slender-striped Rufous	RE
Colostygia olivata	Beech-green Carpet	EN
Cucullia absinthii	Wormwood	RE
Cucullia verbasci	Mullein	RE
Cyclophora punctaria	Maiden's Blush	EN
Dicallomera fascelina	Dark Tussock	NT
Diloba caeruleocephala	Figure of Eight	NT

Species name	Common name	Red List Status
Drymonia dodonaea	Marbled Brown	VU
Earias clorana	Cream-bordered Green Pea	RE
Eilema caniola	Hoary Footman	NT
Enargia paleacea	Angle-striped Sallow	VU
Ennomos erosaria	September Thorn	RE
Entephria caesiata	Grey Mountain Carpet	NT
Entephria flavicinctata	Yellow-ringed Carpet	CR
Epirrhoe tristata	Small Argent & Sable	VU
Epirrita filigrammaria	Small Autumnal Moth	VU
Eriogaster lanestris	Small Eggar	NT
Eupithecia denotata	Jasione Pug	VU
Eupithecia intricata	Freyer's/Mere's Pug	VU
Eupithecia pygmaeata	Marsh Pug	VU
Eupithecia simpliciata	Plain Pug	VU
Eupithecia succenturiata	Bordered Pug	VU
Euxoa cursoria	Coast Dart	NT
Euxoa nigricans	Garden Dart	NT
Furcula bicuspis	Alder Kitten	VU
Globia sparganii	Webb's Wainscot	VU
Gnophos dumetata	Irish Annulet	EN
Hyppa rectilinea	Saxon	VU
Idaea muricata	Purple-bordered Gold	EN
Lacanobia suasa	Dog's Tooth	NT
Larentia clavaria	Mallow	CR
Lenisa geminipuncta	Twin-spotted Wainscot	VU
Leucodonta bicoloria	White Prominent	EN
Luperina nickerlii	Sandhill Rustic	EN
Lymantria monacha	Black Arches	VU
Macaria wauaria	V-Moth	RE
Miltochrista miniata	Rosy Footman	VU
Odezia atrata	Chimney Sweeper	VU
Orthosia miniosa	Blossom Underwing	RE
Orthosia opima	Northern Drab	VU
Orthosia populeti	Lead-coloured Drab	VU
Parasemia plantaginis	Wood Tiger	NT
Parastichtis suspecta	Suspected	RE
Pareulype berberata	Barberry Carpet	RE
Pechipogo strigilata	Common Fan-foot	RE
Perizoma flavofasciata	Sandy Carpet	NT
Perizoma minorata	Heath Rivulet	VU
Phytometra viridaria	Small Purple-barred	NT
Polia bombycina	Pale Shining Brown	RE

Species name	Common name	Red List Status
Polymixis xanthomista	Black-banded	VU
Pyropteron muscaeformis	Thrift Clearwing	CR
Rheumaptera hastata	Argent & Sable	VU
Rhyacia simulans	Dotted Rustic	VU
Scopula ternata	Smoky Wave	VU
Sesia apiformis	Hornet Moth	RE
Synanthedon scoliaeformis	Welsh Clearwing	VU
Tethea or	Poplar Lutestring	NT
Tholera decimalis	Feathered Gothic	CR
Triphosa dubitata	Tissue	NT
Xanthorhoe decoloraria	Red Carpet	EN
Xylena exsoleta	Sword-grass	RE
Zygaena lonicerae	Narrow-bordered Five-spot Burnet	VU

5.5 Mayflies (Ephemeroptera)

Nomenclature and the latest Red List assessment of the Irish mayflies are from Kelly-Quinn & Regan (2012).

Table 21 Checklist of Mayflies (Ephemeroptera)

Species name	Common name	Red List Status
Ameletus inopinatus	Upland Summer Mayfly	NT
Baetis atrebatinus	Dark Olive	EN
Ephemerella notata	Yellow Hawk	EN
Kageronia fuscogrisea	Brown May Dun	NT
Leptophlebia marginata	Sepia Dun	VU
Procloeon bifidum	Pale Evening Dun	VU
Rhithrogena germanica	March Brown	VU
Siphlonurus armatus	Scarce Summer	CR

5.6 Stoneflies (Plecoptera)

Nomenclature and the latest Red List assessment of the Irish stoneflies are from Feeley *et al.* (in press).

Table 22 Checklist of Stoneflies (Plecoptera)

Species name	Common name	Red List Status
Capnia atra		VU
Perlodes mortoni		RE
Protonemura praecox		EN

5.7 Water Beetles (Aquatic Coleoptera)

The latest Red List assessment of the water beetles is Foster *et al*. (2009). Scientific and common names are from Foster *et al*. (2009), other than *Ochthebius viridis fallaciosus*, which has since been elevated from sub-species to species (Villastrigo *et al*., 2018) and a generic change of *Stictotarsus multilineatus* to *Boreonectes multilineatus*.

Table 23 Checklist of Water Beetles (Aquatic Coleoptera)

Species name	Common name	Red List Status
Agabus arcticus	Arctic Diver	NT
Agabus congener	Relative Diver	VU
Agabus conspersus	Spattered Diver	EN
Agabus labiatus	Lipped Diver	NT
Bagous alismatis	Water Plantain Sloth Weevil	CR
Bagous brevis	Short Sloth Weevil	CR
Bagous frit	A sloth weevil	VU
Bagous glabrirostris	Bald-beaked Sloth Weevil	RE
Bagous limosus	Mud Sloth Weevil	CR
Bagous lutulentus	Horsetail Sloth Weevil	CR
Berosus luridus	Sallow Scavenger Beetle	CR
Berosus signaticollis	Spotted Scavenger Beetle	EN
Bidessus minutissimus	Diminutive Diver	RE
Boreonectes multilineatus (*Stictotarsus multilineatus*)	Bubblegum Diver	NT
Cyphon kongsbergensis	Kongsberg Marsh Beetle	VU
Cyphon punctipennis	Transition Marsh Beetle	VU
Donacia aquatica	Zircon Reed Beetle	VU
Donacia cinerea	Hairy Reed Beetle	VU
Donacia marginata	A reed beetle	NT
Donacia semicuprea	Halfpenny Reed Beetle	RE
Dryops similaris	Turlough Long-Claw	NT
Dytiscus circumcinctus	Ring-eyed Great Diving Beetle	NT
Dytiscus lapponicus	Highland Great Diving Beetle	NT
Enicocerus exsculptus	Sculptured Moss Beetle	EN
Enochrus halophilus	Salty Scavenger Beetle	VU
Enochrus melanocephalus	Blackheaded Scavenger Beetle	NT
Graptodytes bilineatus	Two-lined Diver	NT
Gyrinus distinctus	Distinguished Whirligig	NT
Gyrinus natator	Shady Whirligig	NT
Gyrinus urinator	Artist Whirligig	NT
Haliplus apicalis	Saltmarsh Crawler Water Beetle	EN
Haliplus lineolatus	Hydravore Crawler Water Beetle	NT
Haliplus variegatus	Variegated Crawler Water Beetle	VU

Species name	Common name	Red List Status
Helophorus alternans	Ridge and Furrow	RE
Helophorus arvernicus	Upland Frenchman	EN
Helophorus fulgidicollis	Orangeman	VU
Helophorus granularis	Little Nobby	EN
Helophorus nanus	Dwarf	VU
Helophorus strigifrons	Wrinkled Brow	VU
Hydraena minutissima	Diminutive Moss Beetle	CR
Hydraena nigrita	Black Moss Beetle	VU
Hydraena pulchella	Beautiful Moss Beetle	RE
Hydraena pygmaea	Pygmy Moss Beetle	RE
Hydraena rufipes	Red-Legged Moss Beetle	EN
Hydraena testacea	Shelled Moss Beetle	VU
Hydrochus angustatus	Narrow Scavenger Beetle	RE
Hydrochus brevis	Bereft Scavenger Beetle	VU
Hydrochus ignicollis	Hotnecked Scavenger Beetle	NT
Hydrocyphon deflexicollis	Rockhopper Beetle	EN
Hydroporus glabriusculus	Three Bs Diver	EN
Hydroporus longicornis	Sharp's Parallel Diver	EN
Hydroporus morio	Quicksilver Diver	VU
Hydroporus obsoletus	Semisubterranean Diver	NT
Hydroporus scalesianus	Mr Scales's Diver	NT
Hygrotus decoratus	Decorous Diver	CR
Hygrotus novemlineatus	Nine-lined Diver	VU
Hygrotus versicolor	Rash Diver	VU
Ilybius chalconatus	Copper Diver	VU
Ilybius subaeneus	Dull Bronze Diver	VU
Laccobius atratus	Charred Scavenger Beetle	NT
Laccophilus hyalinus	Dinghy Skipper	VU
Laccornis oblongus	Dualist	NT
Limnebius nitidus	Bright Moss Beetle	EN
Macroplea appendiculata	Submerged Reed Beetle	NT
Ochthebius auriculatus	Eared Moss Beetle	NT
Ochthebius bicolon	Double Colon Moss Beetle	VU
Ochthebius fallaciosus (*Ochthebius viridis fallaciosus*)	Deceptive Moss Beetle	NT
Ochthebius marinus	Marine Moss Beetle	NT
Ochthebius nilssoni	Ciaróginbán	VU
Oreodytes davisii	Davis's River Diver	NT
Paracymus scutellaris	Shield Scavenger Beetle	NT
Plateumaris bracata	Breeched Water Beetle	CR
Plateumaris rustica	Peasant Reed Beetle	RE

6 Invertebrates (other than insects)

Checklists are currently provided for crayfish and non-marine Mollusca.

6.1 Crayfish (Astacoidea)

The relevant national legislation is the Wildlife Act (1976), as amended. White-clawed Crayfish *Austropotamobius pallipes* was added to the Wildlife Act, 1976 by regulations made in S.I. No. 112 of 1990. Nomenclature follows the Habitats Directive (Annex II).

Table 24 Checklist of Other invertebrates

Species name	Common name	EU HD	WA
Austropotamobius pallipes	White-clawed Crayfish	II V	WA

6.2 Non-marine Mollusca

The latest Red List assessment of the Irish non-marine Mollusca is Byrne *et al*. (2009). The relevant national legislation is the Wildlife Act (1976), as amended. Freshwater Pearl Mussel and Kerry Slug were added to the Wildlife Act, 1976 by regulations made in S.I. No. 112 of 1990. Nomenclature follows the Red List (Byrne *et al*., 2009). Genetic research has since placed the Nore Pearl Mussel (*Margaritifera durrovensis*) within the *Margaritifera margaritifera* taxon (Feind *et al*., 2016; Geist *et al*., 2018).

Table 25 Checklist of Non-marine Mollusca

Species name	Common name	EU HD	WA	Red List Status
Acanthinula aculeata	Prickly Snail			NT
Acicula fusca	Point Snail			VU
Anisus vortex	Whirlpool Ram's Horn			VU
Anodonta anatina	Duck Mussel			VU
Anodonta cygnea	Swan Mussel			VU
Aplexa hypnorum	Moss Bladder Snail			VU
Arianta arbustorum	Copse Snail			VU
Ashfordia granulata	Silky Snail			NT
Balea perversa	Wall Snail			VU
Cecilioides acicula	Blind Snail			VU
Cochlodina laminata	Plaited Door Snail			VU
Ecrobia ventrosa	Spire Snail			VU
Geomalacus maculosus	Kerry Slug	II IV	WA	LC
Gyraulus laevis	Smooth Ramshorn			EN
Helicella itala	Heath Snail			VU
Helicigona lapicida	Lapidary Snail			RE
Hydrobia acuta				EN
Leiostyla anglica	English Chrysalis Snail			VU

Species name	Common name	EU HD		WA	Red List Status
Limax cinereoniger	Ash-black Slug				VU
Margaritifera durrovensis (*Margaritifera margaritifera, Margaritifera margaritifera durrovensis*)	Nore Pearl Mussel	II	V	WA	CR
Margaritifera margaritifera	Freshwater Pearl Mussel	II	V	WA	CR
Mercuria cf. *similis*	Swollen Spire Snail				EN
Merdigera obscura	Lesser Bullin				EN
Musculium lacustre	Lake Orb Mussel				VU
Myxas glutinosa	Glutinous Snail				EN
Omphiscola glabra	Mud Pond Snail				RE
Pisidium conventus	Arctic-alpine Pea Mussel				CR
Pisidium hibernicum	Globular Pea Mussel				NT
Pisidium lilljeborgii	Lilljeborg's Pea Mussel				VU
Pisidium moitessierianum	Pygmy Pea Mussel				EN
Pisidium pseudosphaerium	False Orb Pea Mussel				EN
Pisidium pulchellum	Iridescent Pea Mussel				EN
Pomatias elegans	Land Winkle				CR
Pupilla muscorum	Moss Chrysalis Snail				EN
Quickella arenaria	Sand Amber Snail				EN
Radix auricularia	Ear Pond Snail				VU
Spermodea lamellata	Plaited Snail				EN
Sphaerium nucleus					VU
Succinella oblonga	Small Amber Snail				EN
Tandonia rustica					VU
Testacella haliotidea	Shelled Slug				VU
Testacella maugei	Maugé's Slug				NT
Truncatella subcylindrica	Looping Snail				CR
Vallonia pulchella	Smooth Grass Snail				VU
Vertigo angustior	Narrow-mouthed Whorl Snail	II			VU
Vertigo antivertigo	Marsh Whorl Snail				VU
Vertigo geyeri	Geyer's Whorl Snail	II			VU
Vertigo lilljeborgi	Lilljeborg's Whorl Snail				VU
Vertigo moulinsiana	Des Moulin's Whorl Snail	II			EN
Vertigo pusilla	Wall Whorl Snail				EN
Vertigo pygmaea	Common Whorl Snail				NT
Vertigo substriata	Striated Whorl Snail				NT
Zenobiella subrufescens	Brown Snail				VU
Zonitoides excavatus	Hollowed Glass Snail				VU

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